

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A plasma processing apparatus comprising:

a process vessel in which a substrate is processed;

a gas introducing part that introduces process gas into said process vessel;

a transmissive window including a dielectric to airtightly cover an upper opening of the process vessel;

an antenna member, located above the transmissive window, that introduces a microwave into the process vessel;

a support part supporting a peripheral edge portion of said transmissive window; and

an exhaust pipe that exhausts an atmosphere in the process vessel via an exhaust device,

wherein said transmissive window has, in a center area thereof, a hanging portion made of a same material as a material of said transmissive window, and a gap with a predetermined distance or more is formed between an outer peripheral surface of the hanging portion and a sidewall of said support part, [[and]]

wherein  $L/D$  is equal to 3 or more, where  $L$  is a vertical length of the hanging portion and  $D$  is the predetermined distance, and

wherein the gap extends over an entirety of the vertical length such that there is a uniform gap width.

Claim 2 (Original): The plasma processing apparatus according to claim 1, wherein the predetermined distance is 0.5 to 10 mm.

Claim 3 (Original): The plasma processing apparatus according to claim 1, wherein the predetermined distance is 0.5 to 5 mm.

Claim 4 (Canceled)

Claim 5 (Original): The plasma processing apparatus according to claim 1, wherein a recessed portion is formed in a center side area of the hanging portion.

Claim 6 (Original): The plasma processing apparatus according to claim 5, wherein a sidewall forming the recessed portion is a tapered surface inclining toward a center side of the recessed portion.

Claim 7 (Original): The plasma processing apparatus according to claim 5, wherein a width of the hanging portion is  $\lambda/4$  or less, where  $\lambda$  is a wavelength of the microwave in said transmissive window.

Claim 8 (Canceled)

Claim 9 (Currently Amended): The plasma processing apparatus according to claim 1, wherein ~~[[a]]~~ the vertical length of the hanging portion is 20 mm or more.

Claim 10 (Currently Amended): The plasma processing apparatus according to claim 1, wherein at least one ~~of surfaces~~ surface, in said support part or the sidewall continuing from said support part, facing an inside of said process vessel is coated with  $Y_2O_3$  (yttria).

Claim 11 (Currently Amended): A plasma processing apparatus comprising:

- a process vessel in which a substrate is processed;
- a gas introducing part that introduces process gas into said process vessel;
- a transmissive window including a dielectric to airtightly cover an upper opening of the process vessel;
- an antenna member, located above the transmissive window, that introduces a microwave into the process vessel;
- a support part supporting a peripheral edge portion of said transmissive window; and
- an exhaust pipe that exhausts an atmosphere in the process vessel via an exhaust device,

wherein under said support part, an eave portion projecting ~~into~~ from a sidewall of the process vessel toward an interior of the process vessel is ~~disposed apart~~ separate from a contact point between the support part and a lower surface of said transmissive window by a predetermined distance or more on an entire surface in a circumferential direction.

Claim 12 (Original): The plasma processing apparatus according to claim 11, wherein the predetermined distance is 0.5 to 10 mm.

Claim 13 (Original): The plasma processing apparatus according to claim 11, wherein the predetermined distance is 0.5 to 5 mm.

Claim 14 (Withdrawn): A plasma processing method using a plasma processing apparatus that processes a substrate in a process vessel by plasma generated by supply of a microwave, the plasma processing apparatus comprising: a transmissive window made of a dielectric to airtightly cover an upper opening of the process vessel; and a support part

supporting, in the process vessel, a peripheral edge portion of the transmissive window, wherein the transmissive window has, in a center area thereof, a hanging portion made of a same material as a material of the transmissive window, and a gap is formed between an outer peripheral surface of the hanging portion and a sidewall inner surface of the process vessel continuing from the support part, and the method comprising

adjusting size of the gap to control strength of an electric field in a peripheral portion of the transmissive window.

Claim 15 (Withdrawn): The plasma processing method according to claim 14, wherein the outer peripheral surface of the hanging portion is a tapered surface with the gap gradually becoming larger toward a lower side, and

wherein the strength of the electric field in the peripheral portion of the transmissive window is controlled by adjusting a taper angle of the tapered surface instead of adjusting the size of the gap.

Claim 16 (Previously Presented): The plasma processing apparatus according to claim 1, wherein corner portions on a boundary between the outer peripheral surface of the hanging portion and a portion, in the transmissive window, supported by the support part, and corner portions on a boundary between the outer peripheral surface of the hanging portion and a lower surface of the hanging portion, have a curved surface shape.